Notes of the MI BPM meeting May 17, 2005
Transparencies of David Capista are found in Beams-doc-#1834-v1
Manfred Wendt

David Capista
gave a detailed explanation on each of the different MI operating modes,
i.e. Tclk RESET events with all possible MI modes, description of the modes,
wish-list of how and what kind of position measurements the BPM system
should acquire.

During Dave's presentation lots of discussion arises on various points, e.g.:
 - naming: The definition of the words supercycle, cycle, event
   (Tclk, beam sync), mode, state, etc. seems to be now more clear, but
   should be written down.
 - BPM TBT batch measurement: Among the wish-list the turn-by-turn or
   first (last) turn wideband BPM measurements has to be capable to be
   pointed on a particular batch of bunches. Within a cycle this point
   must be changeable to acquire the first turn of several batches, or the
   last turn of a particular batch to be ejected.
 - Memory allocation: Much discussion arises on how to organise memory
   for the different operating modes. This point seems to require more
   discussion.
During the ongoing mix of Dave's presentation and discussion many
details could be clarified, e.g.
 - each Tclk event (e.g. $21,...) is followed by a RF state information,
   which defines the particular operating mode in that cycle. Currently
   there are 31+ modes defined.
 - Beam sync events are used to fire the kickers for e/in-jection, the
   beam sync event will reflect a Tclk event. The reflected Tclk event
   might be used to switch the BPM system for TBT or single turn
   wideband mose.
 - A "batch-pointer" turn-trigger signal has to be setup (delayed
   AA marker?) to point to an individual batch.
 - More names: Dave defines for the narrowband, closed orbit operation
   of the BPM system 2 different memory frames:
   "display frame" = narrowband, closed orbit: 1 single acquisition
   "profile frame" = narrowband, closed orbit: 128 orbit measurements
   A "flash" is a single turn, wideband BPM measurement on a particular
   batch of bunches.

David Capista

also presents a minimum version of the MI BPM system, which he derived
from the TeV BPM setup wit some minor changes. This minimum MI BPM system
has all the functionality of the existing BPM system and could be
implemented for the transition from old to new BPM system as minimum
solution.
Discussion on this followed, particular on switching between 2.5 and
53 MHz operation. Peter clarified how the Echotek module works, i.e.
narrowband 2.5 and 53 MHz data is acquired simultaneously, as well as
wideband TBT 2.5 and 53 MHz data is also acquired always simultaneously.
Further discussion on this topic leads to the question if it would be
preferable to switch between 2.5 and 53 MHz operation manual or
automatic (controlled by the LLRF).

Alberto Marchonni
finally said, that he will change his "Requirement" document towards
higher proton intensities, i.e. up to 200E9 protons/bunch, as there are
dreams to accelerate up to total 1E14 protons in the Main Injector in some
future...